

WHAT IS CLAIMED IS:

1. A triggerless back tension release for use with a bow string comprising:

a handle;

a release head assembly including a rope loop and a first component pivotally mounted relative to a portion of said handle, said first component carrying a sear element having a sear edge and a hook adapted for receiving said rope loop;

a locking rod located in said handle portion and actuated by a lever in said handle portion to engage and lock a second component of the release head assembly relative to said first component, said second component arranged to interact with said sear edge and to release said sear element and thereby release the bow string upon movement of the handle.

2. The triggerless back tension release of claim 1 wherein said release head assembly is a two-link release head assembly secured to a free end of said portion of said handle, said second component comprising an intermediate link pivotably mounted on said portion of said handle and said first component comprising a forward link pivotably mounted to said intermediate link.

3. The release of claim 2 and further comprising a lever in said handle and a locking rod slidably received in said portion of said handle and selectively engageable with said intermediate link, said lever operatively

connected to said locking rod to move said locking rod toward or away from said intermediate link.

4. The release of claim 3 wherein a drive rod is slidably received in said portion of said handle and connected to said lever by a toggle link pivotally connected to said lever; a forward end of said drive rod and a rearward end of said locking rod having cooperating cam surfaces such that movement of said drive rod toward said locking rod causes said locking rod to move away from said intermediate link.

5. The release of claim 4 wherein said drive rod is formed with a substantially ball-shaped rearward end that is nested within a cradle portion of said toggle link.

6. The release of claim 5 wherein a pivot axis of said toggle link is moveable from a position substantially aligned with a longitudinal axis of the drive rod to a position offset from said longitudinal axis as said drive rod moves toward said locking rod.

7. The release of claim 3 wherein said locking rod is engaged by a first spring arranged to bias said locking rod toward said intermediate link.

8. The release of claim 7 wherein said drive rod is engaged by a second spring arranged to bias said drive rod away from said locking rod.

9. The release of claim 8 wherein said lever includes press surfaces at opposite ends thereof such that pressing one end of said lever causes said drive rod

to move toward said locking rod and to move said locking rod away from said intermediate link, and pressing the other end of said lever causes said drive rod to move away from said locking rod and permitting said first spring to move said locking rod into engagement with said intermediate link.

10. The release of claim 3 wherein said intermediate link is free to rotate about a first pivot pin in said portion of said handle and wherein said locking rod has a tapered end movable into engagement with said intermediate link upon movement of said lever to lock said intermediate link relative to said handle in any position within a range of movement of said intermediate link.

11. The release of claim 10 wherein said forward link is rotatable about a second pivot pin fixed to said intermediate link whether said intermediate link is locked or unlocked.

12. The release of claim 11 wherein said intermediate link includes a tab positioned to limit pivoting movement of said forward link when said intermediate link is locked.

13. The release of claim 2 including an O-ring for resiliently holding said intermediate link and said forward link in engagement with one another.

14. The release of claim 1 wherein said first component comprises a yoke having a pair of laterally

spaced sides and ears depending from said sides, and a first pin extending through said ears and said portion of said handle to thereby pivotally mount said first component to said portion of said handle; said sear element located between said laterally spaced sides and pivotally mounted to said yoke by a second pin extending through said sides and said sear element.

15. The release of claim 14 wherein said second component comprises a pawl head located between said laterally spaced ears and carried by said first pin, said pawl head having a pawl edge arranged to interact with said sear edge.

16. The release of claim 15 and further comprising a set screw extending through said pawl head and adapted to engage a surface of said sear element to adjust relative positions of said sear edge and said pawl edge.

17. A triggerless back tension release for use with a bow string comprising:

a handle;

a release head assembly including a rope loop and a first component pivotally mounted relative to a portion of said handle, said first component comprising a yoke having a pair of laterally spaced sides and ears depending from said sides, and a first pin extending through said ears and said portion of said handle to thereby pivotally mount said yoke to said portion of said handle;

a sear element located between said laterally spaced sides and pivotally mounted to said yoke by a second pin extending through said sides and said sear element, said sear element having a sear edge and a hook adapted for receiving said rope loop;

a pawl head located between said laterally spaced ears and carried by said first pin, said pawl head having a pawl edge arranged to interact with said sear edge and thereby free said sear element for rotation permitting said rope loop to escape said rope hook; and

a locking rod located in said handle and actuated by a lever in said handle, said locking rod adapted to engage and lock said sear element relative to said yoke.

18. The release of claim 17 and further comprising a spring mounted on said first pin, said spring having a coil portion and a pair of stems, said pair of stems engaging respective surfaces on said pawl head and said yoke.

19. The release of claim 17 wherein said rope loop is secured at opposite ends thereof to said laterally spaced sides of said yoke.

20. The release of claim 17 wherein said pawl head is formed with a groove arranged to receive said locking rod.

21. The release of claim 17 wherein said pawl head is provided with a tab arranged to engage said yoke and

thereby limit movement of said pawl head relative to said yoke.

22. The release of claim 17 and further comprising a set screw extending through said pawl head and adapted to engage a surface of said sear element to adjust relative positions of said sear edge and said pawl edge.